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| Title | Air Quality Measurement at the Solid Waste Disposal of Matuail Landfill Site at Dhaka, Bangladesh | | |
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| Abstract |  |
| An investigation was conducted to assess the air quality impact and possible health risk of solid waste disposal on surrounding environment of Matuail landfill site in Dhaka city. Three different locations were selected for soil and plant samples. Leachate samples were collected from active dumping area and fish samples from treated leachate pond. Seven different locations were selected for air quality and health risk assessments. It is found that Cu, Zn and Pb concentrations were high in the soil of dumping and abandoned areas that exceeded the permissible limits. The heavy metal concentrations in plant samples did not show any significant contamination except Cu, Zn and Pb that also exceeded the permissible limits. The concentrations of DO, BOD, COD and TDS of the untreated leachate were found 1.34 mg L-1, 96 mg L-1, 1343 mg L-1 and 7120 mg L-1, respectively that exceeded inland surface water standard but after treatment its concentrations were found within the permissible limits. The presence of heavy metals in leachate sample was not contaminated as it was below the toxic limits. The bioaccumulation of fish sample from treated pond is extremely high of Fe, Mn, Pb and Ni that exceeded the WHO’s permissible limits. The air quality results showed that the Matuail landfill surrounding sites did not have an adverse effect. The air pollutants such as NOx, SO2, SPM, PM10, PM2.5 and CO contents are within national standard limits. Overall, the risk assessments demonstrated that potential air emissions from the Matuail Landfill site do not pose public health risks. It is clear that if the dumping landfill site is properly managed by segregating the waste according to their source, then this waste could be used as compost or organic manures. However, by maintaining disposal sites with controlled placement and proper treatment of the waste may reduce the possible adverse impact on air, human health and agri-environmental eco-systems. Further investigation on the impacts related to the final disposal of solid waste and the future landfill requirement at different composting and a comparative study is suggested. | |

**Please specify which Sustainable Development Goal (SDG) (s) falls under your research:**

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| Goal 1 | No Poverty | Goal 2 | Zero Hunger |
| **Goal 3** | **Good Health and Well-Being** | Goal 4 | Quality Education |
| Goal 5 | Gender Equality | Goal 6 | Clean Water and Sanitation |
| Goal 7 | Affordable and Clean Energy | Goal 8 | Decent Work and Economic Growth |
| Goal 9 | Industry, Innovation and Infrastructure | Goal 10 | Reduced Inequalities |
| Goal 11 | Sustainable Cities and Communities | Goal 12 | Responsible Consumption and Production |
| Goal 13 | Climate Action | Goal 14 | Life below Water |
| Goal 15 | Life on Land | Goal 16 | Peace, Justice and Strong Institutions |
| Goal 17 | Partnerships for the Goals |  |  |